

BOOK REVIEWS

Advances and Applications of Mathematical Biology. By N. Rashevsky. Chicago, University Press, 1940. 18+214 pp. \$2.00.

As the title indicates, the book under discussion deals with the more recent progress made by Rashevsky and his group in the systematization of what they have termed physico-mathematical biology. The problems with which the author is primarily concerned are those already delineated in his fundamental work published about two years ago, viz.: (a) cellular metabolism and growth, (b) conduction of nerve impulses and (c) neuropsychological reactions. In the present volume one finds that the analytical method first employed has been somewhat simplified and additional examples are given of the agreement between actual observations and some of the conclusions derived from mathematical reasoning. In the case of cellular diffusion, for example, the author has succeeded in developing formulations which are not restricted by the postulate that the cells are spherical. The elimination of this restriction obviously opens the way to a more general application of the author's rationalizations. Thus, he is enabled to outline with greater precision his concepts regarding the effects of diffusion forces on cell division.

This and the preceding book will probably interest the mathematician mainly because they reveal the kinds of important and vital problems that can be tackled with rather simple analytical tools. The biologist will undoubtedly be stimulated by the fresh ideas emerging from some of the mathematical developments, even though the unverifiable nature of some of the postulates will for the present hinder the experimental or observational evaluation of all the deductions that can be reached.

ANTONIO CIOCCO

Sur les Valeurs Exceptionnelles des Fonctions Méromorphes et de Leurs Dérivées. By Georges Valiron. (Actualités Scientifiques et Industrielles, no. 570.) Paris, Hermann, 1937. 55 pp.

One of the outstanding methods of the present century in the theory of functions of a complex variable is that of normal families of functions, a method which has well known applications to the study of convergence of sequences of analytic functions, the distribution of functional values of functions analytic or meromorphic in a circle or in the entire finite plane, conformal mapping, the theorems of Picard, Landau, Schottky, and so on. Each new condition for normal-